



US005278258A

United States Patent [19]

Gerace et al.

[11] **Patent Number:** 5,278,258[45] **Date of Patent:** Jan. 11, 1994[54] **CROSS-LINKED SILICONE POLYMERS,
FAST CURING SILICONE PRECURSOR
COMPOSITIONS, AND INJECTABLE
INTRAOCULAR LENSES**[75] **Inventors:** John D. Gerace, Laguna Niguel; F.
Richard Christ, Laguna Beach, both
of Calif.[73] **Assignee:** Allergan, Inc., Irvine, Calif.[21] **Appl. No.:** 885,136[22] **Filed:** May 18, 1992[51] **Int. Cl.⁵** C08G 77/20; C08F 283/12[52] **U.S. Cl.** 525/478; 528/15;
528/31; 528/32[58] **Field of Search** 525/478; 528/15, 31,
528/32[56] **References Cited****U.S. PATENT DOCUMENTS**

3,284,406	11/1966	Nelson	260/46.5
3,341,490	9/1967	Burdick	260/37
3,457,214	7/1969	Modic	260/37
3,992,355	11/1976	Itoh et al.	260/46.5 UA
3,996,187	12/1976	Travnicek	260/37 SB
3,996,189	12/1976	Travnicek	260/37 SB
4,122,246	10/1978	Sierawski	528/15
4,380,643	4/1983	Yoshida et al.	548/260
4,418,165	11/1983	Polmanteer et al.	523/210
4,535,141	8/1985	Kroupa	528/15
4,542,542	9/1985	Wright	623/6
4,573,998	3/1986	Mazzocco	623/6
4,608,050	8/1986	Wright et al.	623/6
4,615,702	10/1986	Kozioł et al.	623/6
4,647,282	3/1987	Fedorov et al.	623/4
4,737,558	4/1988	Falcetta et al.	526/279
4,785,047	11/1988	Jensen	524/714
4,801,642	1/1989	Janik et al.	524/714
4,868,151	9/1989	Reich et al.	525/479
4,882,398	11/1989	Mbah	525/478
4,973,642	11/1990	Donatelli et al.	528/15
4,990,560	2/1991	Ikeno et al.	524/731

FOREIGN PATENT DOCUMENTS

1273144	8/1990	Canada
0110537	6/1984	European Pat. Off.

OTHER PUBLICATIONSNishi, Okihiro, "Refilling the lens of the rabbit eye after
intercapsular cataract surgery using an endocapsular
balloon and an anterior capsule suturing technique", J.
Cataract Refract Surgery-vol. 15, Jul. 1989.Nishi, et al., "Further development of experimental
techniques for refilling the lens of animal eyes with a
balloon", J. Cataract Refract Surg-vol. 15, Sep. 1989.Parel et al., "Phaco-Ersatz:cataract surgery designed to
preserve accommodation", Graefe's Arch Clin Exp
Ophthalmol (1986) 224:165-173.Haeffliger, et al., "Accommodation of an Endocapsular
Silicone Lens (Phaco-Ersatz) in the Nonhuman Pri-
mate", Ophthalmology, May 1987, vol. 94, No. 5.Saam, Formation of Linear Siloxane Polymers, 1990
American Chemical Society, pp. 71-89.

(List continued on next page.)

Primary Examiner—John C. Bleutge*Assistant Examiner*—Margaret W. Glass*Attorney, Agent, or Firm*—Gordon L. Peterson

[57]

ABSTRACT

Polymeric materials which are optically clear and resis-
tant to discoloration are disclosed. In one embodiment,
such compositions comprise optically clear, cross-
linked polymers derived from a mixture comprising (A)
a vinyl-containing polyorganosiloxane component, and
(B) an organosilicon component including silicon-
bonded hydride groups which react with vinyl groups
included in (A) during the polymerization and (C) an
effective platinum group metal-containing catalyst
component, provided that the mole ratio of vinyl
groups to silicon-bonded hydride groups in the mixture
is greater than 1.2, preferably greater than about 4 or
about 5, and is such that the polymer has a reduced
discoloration susceptibility relative to a substantially
identical polymer having a mole ratio of vinyl groups to
silicon-bonded hydride groups in the precursor mixture
equal to 1.2.

12 Claims, No Drawings